Raven Series Modular Media Converter System

MIL-RCM16A-V2 16 Slot Raven Conversion Modules

Managed Chassis with AC Power Supply

USER GUIDE

Regulatory Approval

- FCC Class A
- UL 1950
- CSA C22.2 No. 950
- EN60950
- CE
- EN55022 Class A
- EN55024

Canadian EMI Notice

This Class A digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe A respecte toutes les exigences du Reglement sur le materiel brouilleur du

Canada.

European Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community Compliance with these directives imply conformity to the following European Norms:

- EN55022 (CISPR 22) - Radio Frequency Interference
- EN61000-X - Electromagnetic Immunity
- EN60950 (IEC950) - Product Safety

One-Year Limited Warranty

Transition Networks warrants to the original consumer or purchaser that each of it's products, and all components thereof, will be free from defects in material and/or workmanship for a period of one year from the original factory shipment date. Any warranty hereunder is extended to the original consumer or purchaser and is not assignable.

Transition Networks makes no express or implied warranties including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose, except as expressly set forth in this warranty. In no event shall Transition Networks be liable for incidental or consequential damages, costs, or expenses arising out of or in connection with the performance of the product delivered hereunder Transition Networks will in no case cover damages arising out of the product being used in a negligent fashion or manner.

Trademarks

The MiLAN logo and Transition Networks trademarks are registered trademarks of Transition Networks in the United States and/or other countries.

To Contact Transition Networks

For prompt response when calling for service information, have the following information ready:
- Product serial number and revision
- Date of purchase
- Vendor or place of purchase

You can reach Transition Networks technical support at:

E-mail: techsupport@transition.com
Transition Networks
10900 Red Circle Drive
Minnetonka, MN 55344
United States of America

Telephone: +1.800.526.9267
Fax: : +1.952.941.2322

http://www.milan.com
info@ Transition.com

© Copyright 2006 Transition Networks

FCC Warning

This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE Mark Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case

the user may be required to take adequate measures.

Content

Content 4

Introduction 1

Features 1
Software Feature 2
Management Methods 4
Console and Telnet Management 4
Web-based Management 4
SNMP Network Management 4
Package Contents 5

Hardware Description 6

Physical Description 6
Front & Rear Panel 6
LED Indicators 7
System Cabinet 7

Connecting to the Network 10

Pre-Installation Requirements 10
Mounting the Device 10
Desktop Installation 11
Attaching Rubber Pads 11
Rack Mounting 11
Power On 12
Diagnostic Test 13
Connecting the Device via Local console or Telnet 13

Console Management 16

Device Setting 16
Modules Settings 18
Redundant Power Status 20
Events Log 21

SNMP Trap 21
Secure IP for Telnet, HTTP and SNMP 22
Port Counters 23
Fan Status 23
Save Current Settings 24
Factory Default Settings & Reboot System 24
Reboot System 25
TFTP Configuration 25
Web-Based Management 26
About Web-based Management 26
System Login 27
Modules settings 29
Port Counter 34
IP Config 35
SNMP 36
Event Log 37
Miscellaneous Settings 38
Save and Reboot 40
Upgrade 41
Help 42
SNMP Management 43
SNMP Management 43
Specification 45

Introduction

The 16 Slots intelligent converter chassis is a combination of 16-slot host cabinet and several of optional media converter bracket modules. A maximum 16-bracket module can be installed in the cabinet with two redundant power supplies. The Power supply supports AC input type with load sharing redundant feature. The converter supports TS-1000 standard that provides loop back test to ensure the converter failure and remote configuration that allows remote set-up for the module of the converter or the converter.

With build-in Web-based Management, managing and configuring the 16 Slots intelligent converter chassis becomes easier. Users can visually configure and manage their network via the Web browser. Besides, the 16 Slots intelligent converter chassis can also be managed via Telnet, Console, or third-party SNMP Management.

Features

- 16 slots converter chassis with 2 power slots
- AC power with Redundant
- Maximum 16 slots for media converter
- HTTP, Telnet security
- IP address security for management station
- Web and TFTP firmware upgrade
- Built-in Link Lost Forwarding (LLF)/Link Fault Pass-Through (LFP)
- Back-door password supported
- Module identification
- Fiber Module hot-swappable
- CPU module hot-swappable
- SNMP, Web, Telnet, console management
- Optional different converter modules: 10/100TX to 100FX module,

100/1000TX to Gigabit fiber module, 100/1000TX to Mini-GBIC module, and 100FX WDM module

- 100FX and Gigabit modules support single mode or multi mode fiber
- Supports TS-1000 on 10/100TX to 100FX module and 100FX WDM module
- Event log and SNMP Trap supported
- SNMP MIB II and private MIB supported
- Supports Simple Network Time Protocol (SNTP)
- Power and Fan Detect
- Loop Back Test
- EIA RS-310C 19 “ standard

Software Feature

Management	Telnet Web Console (RS-232)
Web/Telnet	Web and Telnet function Can be enabled or disabled
MIBS	RFC 1213 MIB II Private MIB
SNMP Trap	Link down Link up Power module status change Authorization Fail Module plug in and plug out Chassis configuration change Module configuration change

Software Upgrade	Firmware upgrade by Web interface and TFTP
Link Loose Forward	Each module supports LLF feature. It can be set by Web or CLI menu **LLF Mode TX → Fiber:** TX port link down, the fiber port will be forced down **LLF Mode Fiber → TX :** Fiber port link down, the TX port will be forced down
Packet counter	**TX port:** IN-good / In-bad packet counter out-good /out-bad packet counter collision counter **Fiber port:** IN-good / In-bad packet counter out-good /out-bad packet counter
SNMP Trap Node	Up to 4 Trap nodes
IP security	IP security for telnet HTTP and SNMP access Up to 4 IP nodes when security is enabled
TS-1000	Loop back test, remote configuration
SNTP	RFC2030 Simple Network Time Protocol
Events log	Up to 4095 event records. It can be reviewed by CLI and Web browser mode

Management Methods

The 16 Slots intelligent converter chassis supports following management methods:

- Console and Telnet Management
- Web-based Management
- SNMP Network Management

Console and Telnet Management

Console Management is done through the RS-232 Console Port that requires a direct connection between PC and the Device. Once the Device is on the network, you can use Telnet program to Log in and modify the configuration. The default IP address is 192.168.1.77 with a subnet mask of 255.255.255.0. This default address can be used to login and change the configuration using Telnet.

Web-based Management

The 16 Slots intelligent converter chassis provides an embedded HTML web program in flash memory. It offers advanced management features and allows users to manage the 16 Slots intelligent converter chassis from anywhere on the network through any HTTP browser such as Microsoft Internet Explorer. For more information, please see the section of Web-Based Management.

SNMP Network Management

SNMP (Simple Network Management Protocol) provides a way to monitor and control network device, such as configurations, statistic collection, performance, and security.

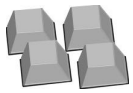
Data is collected by SNMP agents, which are hardware & software processes reporting activity in each network device. The agent reports information contained in a MIB format (Management Information Base), which is a data structure that defines what is obtainable from the device and what can be controlled.

Package Contents

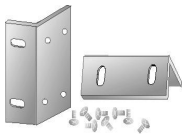
Unpack the carton of the 16 Slots intelligent converter chassis and verify them against the checklist below:

- 16 Slots intelligent converter chassis
- Power Cord
- Four Rubber Pads
- RS-232 cable
- User Manual

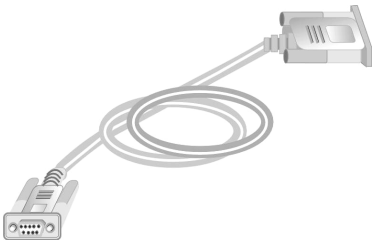
16 Slots intelligent converter chassis



Rubber Pads

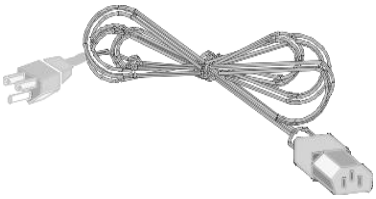


Rack-mounted Kit



RS-232 cable

User Manual



Power Cord

Package Contents

Compare the contents of your 16 Slots intelligent converter chassis package with the standard checklist above. If any item is missing or damaged, please contact the local dealer for service.

Hardware Description

The 16 Slots intelligent converter chassis is a modular unit that contains 16 slots and 2 power slots. All optional models come with the built-in CPU, and the RS-232 port is used for Out-of-Band Management and one Ethernet RJ-45 connector is for In-band management that both in front panel.

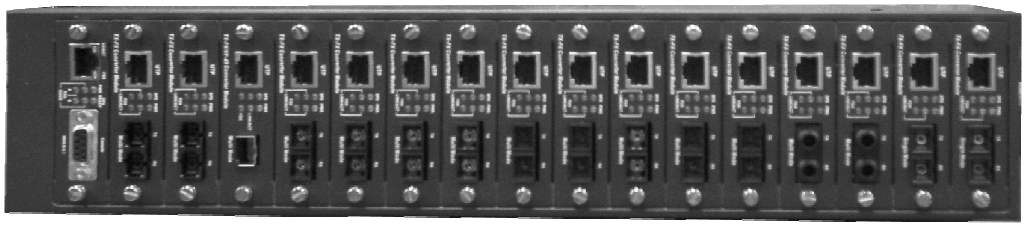
This section mainly describes the hardware of the 16 Slots intelligent converter chassis and gives a physical and functional overview on certain module converter.

Physical Description

The physical dimensions of the 16 Slots intelligent converter chassis is **448mm x 279mm x 89mm (Lx W x H)**

Front & Rear Panel

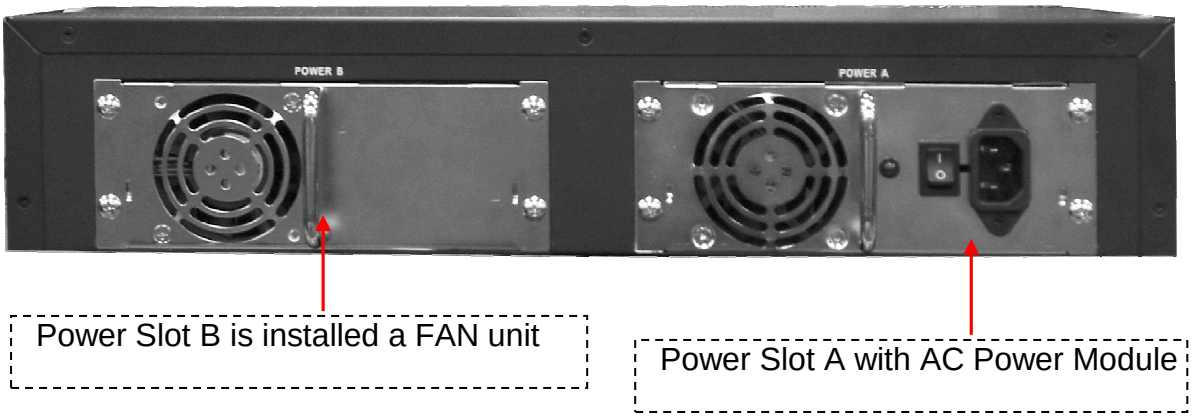
The front panel of 16 Slots intelligent converter chassis with the cabinet and modules is shown as figure below:



Front Panel (within all modules)

The 3-pronged power plug is located at the Rear Panel of the 16 Slots intelligent converter chassis as shown in Figure 2-2. The AC power is in the range between 100 and 240V_{AC}, 50-60Hz (AC type power supply). System can

install two units with the same power type. The Factory Default is one power module unit and one Fan Unit.



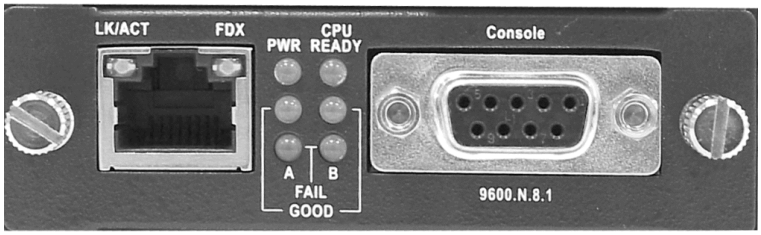
Rear Panel of the 16 Slots intelligent converter chassis

LED Indicators

All LED status indicators are located on the front panel of the modules. They display real-time indication of system and operational status.

System Cabinet

■ CPU Panel



LED	Status	Meaning
CPU Ready	Blink (Green)	System kernel is working correctly
PWR	Green	Power on
Good A	Green	Power Module A Ready
	Off	Power Module A Not Ready
Good B	Green	Power Module B Ready
	Off	Power Module B Not Ready
Fail A	Orange	Power Module A Fail
	Off	Power Module A Ready
Fail B	Orange	Power Module B Fail
	Off	Power Module B Ready

LK/ACT	Green	Ethernet port is connected with the device.
	Blink	The port is receiving or transmitting data
FDX	Yellow	Ethernet is linked with Full Duplex mode
	Blink	Collision of Packets occurs in the port.

Descriptions of the System and CPU LED

Connecting to the Network

This chapter provides the installation procedure.

Pre-Installation Requirements

Before to start hardware installation, make sure the installation environment has following items:

- **PCs with 10/100Base-TX Ethernet cards**: The PC must have a standard Ethernet interface to connect with the Device.
- **UTP/STP cable with RJ-45 connector:** Check the cable and connectors work properly.
- **Fiber cable with SC/ST/MT-RJ/VF-45 connector:** Check the cable and connector types are correct.
- **A power outlet:** 100 to 240V AC at 50 to 60 Hz. Make sure that the Device power is accessible and cables can be connected easily.
- **Dedicated power supply**: Use dedicated power circuits or power conditioners to supply reliable electrical power to the network devices.
- **A dry cool place**: Keep the device away from moisture. Avoid direct sunlight, heat source, and high amount of electromagnetic interference around.
- **Mounting tools:** If user intends to mount the device on a rack, make sure have all the tools, such as mounting brackets and screws.

Mounting the Device

The 16 Slots intelligent converter chassis is suitable for an office environment where it can be rack-mounted in standard EIA 19-inch racks or standalone.

Desktop Installation

Set the device on a sufficiently large flat space with a power outlet nearby. And, the surface where user put the device should be clean, smooth, level, and sturdy. Please make sure there is enough spacing around the device to allow attaching of cables, power cord and air circulation.

Attaching Rubber Pads

1. Make sure mounting surface on the bottom of the device is grease and dust free
2. Remove adhesive backing from Rubber Pads
3. Apply the Rubber Pads to each corner on the bottom of the device. (These footpads can prevent the device from shock/vibration.)

Attaching Rubber Pads to each corner of the Device's bottom

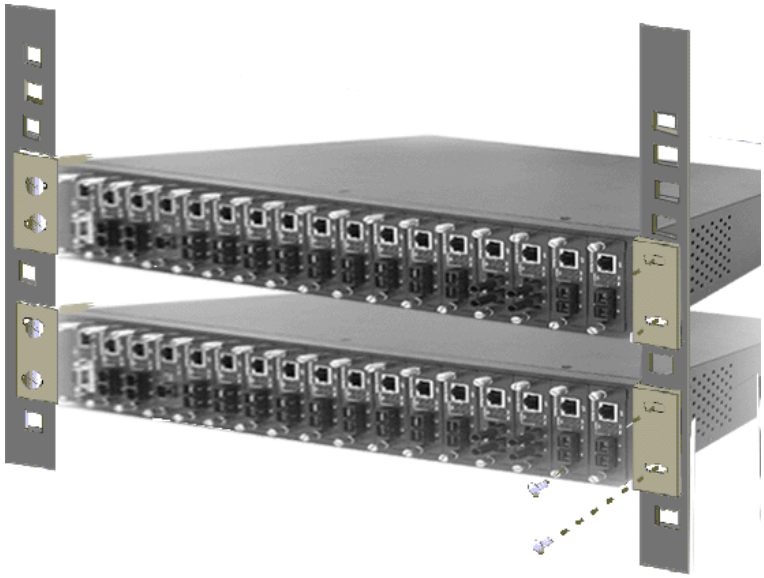
Rack Mounting

The 16 Slots intelligent converter chassis come with a rack-mounted kit and can be mounted in an EIA standard size/19-inch Rack. Perform the following steps for rack mounting the device:

1. Position one bracket to align with the holes on the side of the device and secure it with the bracket screws. Then attach the remaining bracket to the other side of the Device.

Attach mounting brackets with screws

2. After attached both mounting brackets, position the device in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Securing the device to the rack with a screwdriver and the rack-mounting screws.



Mount the converter chassis in an EIA standard 19-inch Rack

[NOTE] For proper ventilation, allow at least 4 inches (10 cm) of clearance on the front and 3.4 inches (8 cm) on the back of the Device. This is especially important for enclosed rack installations.

Power On

After all network cables are connected, plug the power cord into the power socket on the back panel and the other end into a power outlet, and then turn

the power switch on.

Check the front panel Power indicator to see if power is properly supplied. The device with the universal power supply, so there is no more adjustment needed.

Diagnostic Test

After the installation is completed and AC power is applied to the device properly, the system will automatically perform a diagnostic testing. When the Power LED is on within 4 seconds, the CPU Ready LED will become “Blink” and then the system is ready. On the other hand, if the CPU LED always light on, it means system crash.

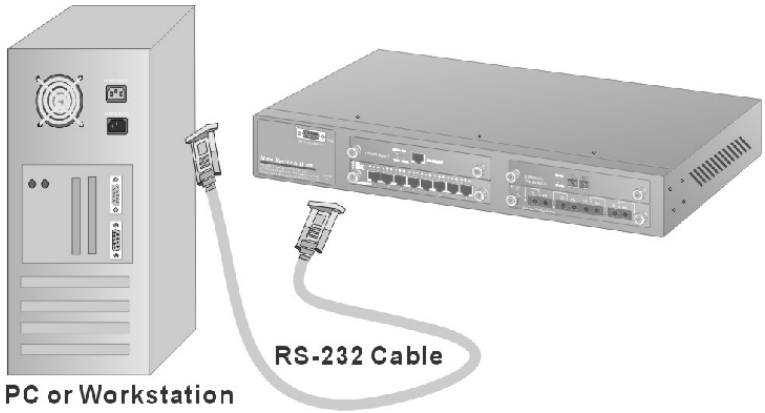
Connecting the Device via Local console or Telnet

The serial console port is a male DB-9 connector that enables the connection from PC or terminal for monitoring and configuring the Device.

Use the supplied RS-232 cable with a female DB-9 connector to link the terminal or PC to the console port.(The terminal or PC must support the terminal emulation program)

For the telnet management, user has to set the device IP address that the same network class with PC’s. (For example; it factory default IP address is 192.168.1.77, then the PC IP address should be 192.168.1.156)

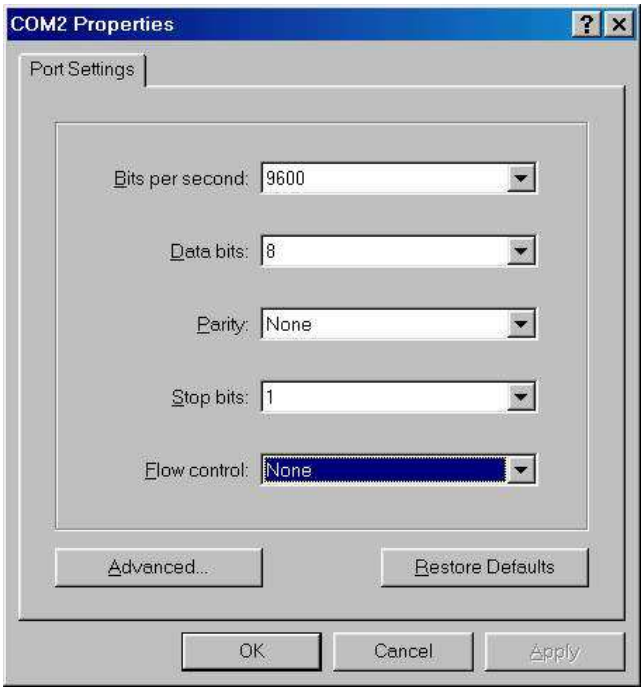
- Default login user name: **root**
- Default login password: **root**



Connecting the Device to a terminal via RS-232 cable

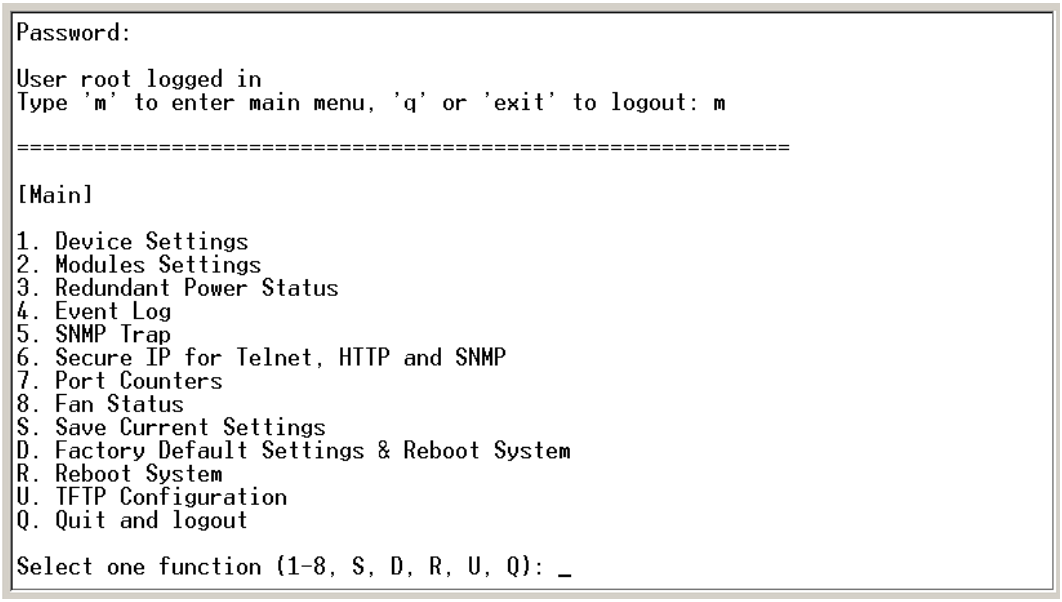
After connected to the Console port, turn the PC or terminal on and **configure its communications parameters** to match the following default characteristics of the console port:

Baud Rate: 9600 bps
Data Bits: 8
Stop Bit: 1
Parity: none
Flow control: None



The setting of communication parameters

Run **Hyper Terminal** or a terminal emulation program using the above settings for Console Management. After user has finished parameter settings, press **Enter** and key the login username and password. The default login username and password both is "**root**". After authentication, enter "**m**" to enter main menu.


Password:
User root logged in
Type 'm' to enter main menu, 'q' or 'exit' to logout: m
[Main]
1. Device Settings
2. Modules Settings
3. Redundant Power Status
4. Event Log
5. SNMP Trap
6. Secure IP for Telnet, HTTP and SNMP
7. Port Counters
8. Fan Status
S. Save Current Settings
D. Factory Default Settings & Reboot System
R. Reboot System
U. TFTP Configuration
Q. Quit and logout
Select one function (1-8, S, D, R, U, Q): _

The Main Menu

Console Management

In this chapter, console management will be described individual function. In fact, console management mode is a line menu mode. User can enter the number of function to configure the function.

Device Setting

Select **Device settings** (Type “1” and press “Enter”) from the main menu. It displays the list of device settings items, ex: system name, location, IP… and so on. User can enter the number to modify the value.

```
Select one function (1-9, A, B, C, Q):
============================================================

[Main] [Device Settings]

0.1 Firmware Version (RO): v2.09
0.2 Hardware Version (RO):  v1.01
0.3 MAC Address (RO):       ff-ff-ff-ff-ff-ff
0.4 Console Info:           9600,N,8,1
0.5 System Up Time (RO):    0 days 0 hours 19 minutes 11 seconds
1. Device Name:             16 slots intelligent converter chassis
2. Location:                Somewhere
3. Contact:                 Someone
4. IP Address:              0.0.0.0
5. Subnet Mask:             0.0.0.0
6. Default Gateway:         0.0.0.0
7. Change User/Password:    root/********
8. Get Request Community:   public
9. Set Request Community:   public
A. HTTP Enabled:            Yes
B. Telnet Enabled:          Yes
C. Set SNTP Configs:        [Disable]
Q. Quit

Note: please save settings and reboot system
so that your device settings will take effect

Select one function (1-9, A, B, C, Q):
```

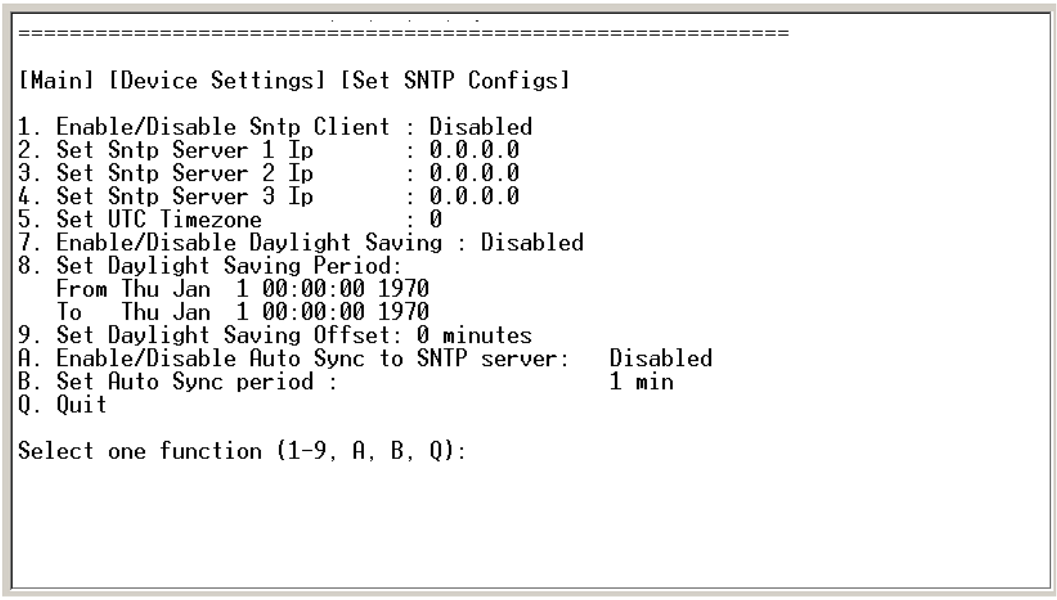
Device Settings interface

[NOTE] The item “0.1, 0.2, 0.3” can’t be modified.

- **1. Device Name:** Set a system name for this device (Character maximum length is 64)
- **2. Location:** the description for the location of device(Character maximum length is 64)

- **3. Contact:** the description for the contact people of device(Character maximum length is 64)
- **4. IP Address:** The IP address of the device(The default IP is **192.168.16.77)**
- **5. Subnet Mask:** The default value is **255.255.255.0**
- **6. Default Gateway:** The default value is **192.168.16.254**
- **7. Change User/Password:** User can change to other username or password (The default username and password is **root**)
- **8. Get Request Community:** The community string for get(The default value is **Public**)
- **9. Set Request Community:** The community string for set(The default value is "**Public**)
- **A. HTTP Enable:** To allow user to configure the converter through Web
- **B. Telnet Enable:** To allow user to remote telnet to the converter for configuring
- **C. Set SNTP Config:** Configuring the SNTP (Simple Network Time Protocol) settings. The SNTP allows user to synchronize switch clocks in the Internet
  - **1. Enable/Disable Sntp Client:** To enable or disable SNTP function to get the time from the SNTP server
  - **2. Set Sntp Server 1 Ip:** Set the SNTP server IP address
  - **3. Set Sntp Server 2 Ip:** Set the SNTP server IP address
  - **4. Set Sntp Server 3 Ip:** Set the SNTP server IP address
  - **5. Set UTC Timezone:** Set the switch location time zone
  - **7. Enable/Disable Daylight Saving:** To enable or disable daylight saving function
  - **8. Set Daylight Saving Period:** When daylight saving is enabling, user can set up the daylight saving period
  - **9. Set Daylight Saving Offset:** Set up the daylight saving time offset value.
  - **A. Enable/Disable Auto Sync to SNTP server:** Automatically synchronize time with the SNTP server
  - **B. Set Auto Sync period:** Set up the time that automatically synchronizes time with SNTP server

- **Q. Quit:** Exit from the current configuration interface

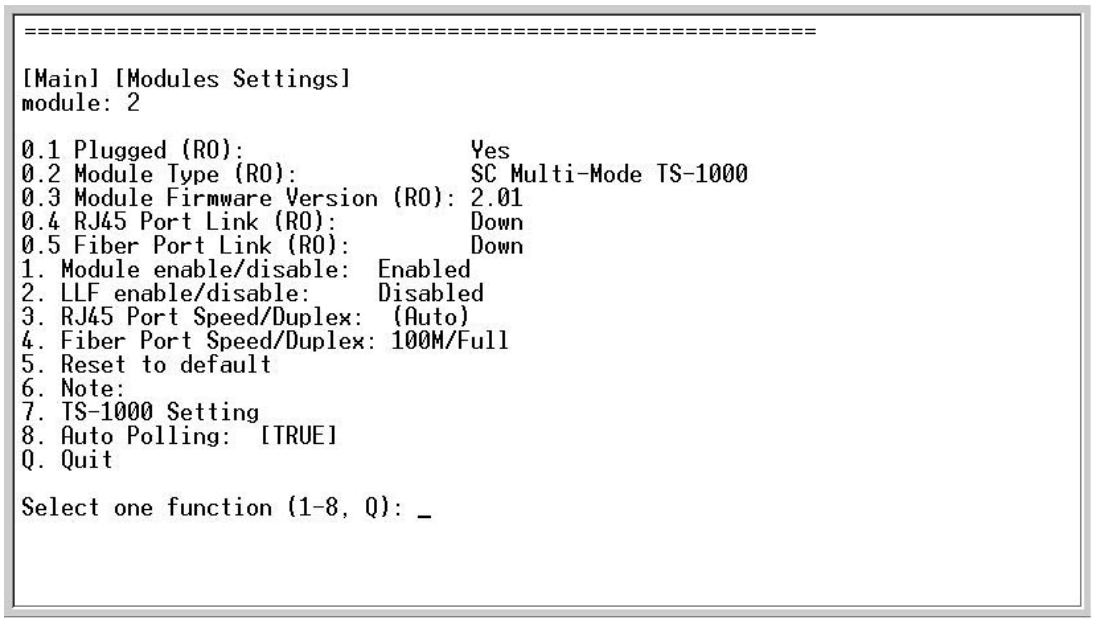

[Main] [Device Settings] [Set SNTP Configs]
1. Enable/Disable Sntp Client : Disabled
2. Set Sntp Server 1 Ip : 0.0.0.0
3. Set Sntp Server 2 Ip : 0.0.0.0
4. Set Sntp Server 3 Ip : 0.0.0.0
5. Set UTC Timezone : 0
7. Enable/Disable Daylight Saving : Disabled
8. Set Daylight Saving Period:
From Thu Jan 1 00:00:00 1970
To Thu Jan 1 00:00:00 1970
9. Set Daylight Saving Offset: 0 minutes
A. Enable/Disable Auto Sync to SNTP server: Disabled
B. Set Auto Sync period : 1 min
Q. Quit
Select one function (1-9, A, B, Q):

Remember to return the Main Menu to **Save** the modified settings, and then **reboot** the device. User may have to press **Enter** again when the device is finished reboot.

Modules Settings

Configure the operation mode of the media converter modules.
Input "**2**" and press "**Enter** "at main menu interface. The system will guide the user to select the module for configuration (Enter the number of module, ex: '1' and then press "Enter").

After entering the module configuration mode, the module configuration interface will list the items as shown in the figure below. Selections 1 ~ 7 allow users to configure the module settings. The items of 0.1 ~ 0.5 are read-only information. Enter the number of selection to modify the value.


[Main] [Modules Settings]
module: 2
0.1 Plugged (RO): Yes
0.2 Module Type (RO): SC Multi-Mode TS-1000
0.3 Module Firmware Version (RO): 2.01
0.4 RJ45 Port Link (RO): Down
0.5 Fiber Port Link (RO): Down
1. Module enable/disable: Enabled
2. LLF enable/disable: Disabled
3. RJ45 Port Speed/Duplex: (Auto)
4. Fiber Port Speed/Duplex: 100M/Full
5. Reset to default
6. Note:
7. TS-1000 Setting
8. Auto Polling: [TRUE]
Q. Quit
Select one function (1-8, Q): _

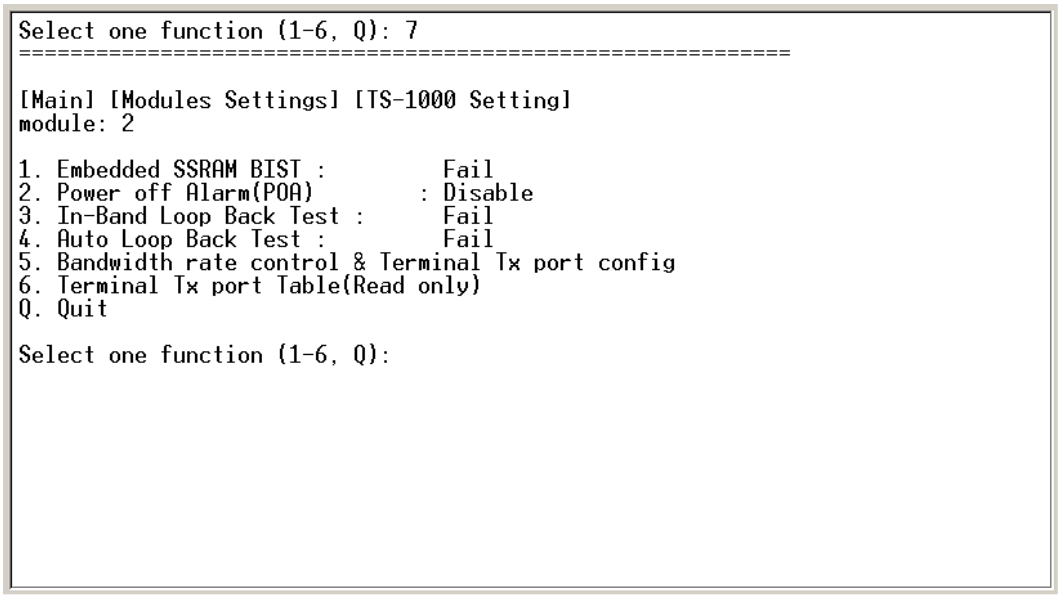
Module setting interface (support TS-1000 module)

- **1. Module enable/disable:** Enable or disable module function (The default is "**Enable**").
- **2. LLF enable/disable:** When the RJ-45 or Fiber is link down, it will force the other port disconnect automatically. The forced way is depends on the RJ-45 control Fiber or Fiber control RJ-45 port. The LLF default is "**RJ-45 Control FX**" and other selections are "**Fx Control RJ-45**" and "**Disable**". On the module that support TS-1000 only can enable or disable the LLF function but can not configure the LLF direction
- **3. RJ-45 Port Speed/ Duplex:** Configuring RJ-45 port speed and mode.(The default is "**10M/Half**")
- **4. Fiber Port Speed/Duplex:** Configuring Fiber port speed and mode(The default is "**10M/Half**")
- **5. Reset to default:** To reset the module configuration to default value
- **6. Note:** Entering the short description or note for this module
- **7. TS-1000 Setting:** It is used for configuring the TS-1000 functions. Only the module supporting TS-1000 standard has this configuration item.
  - **1. Embedded SSRAM BIST:** To test central site converter module status. When test back value is OK which means the central site converter module is normal. When test back value is fail or didn't test, it means the central site converter module is fail
  - **2. Power off Alarm (POA):** To enable or disable the power off alarm

function. **Enable** means before the remote converter power off, the remote converter will send out the alarm notice to the central manager converter

- **3. In-Band Loop Back Test:** Checking the fiber port connection status between remote and central site converter. User needs to set a transfer value, and verify the return value is for verifying if the value the same as user has set
- **4. Auto Loop Back Test:** Checking the fiber port connection status between remote and central site converter automatically
- **5. Bandwidth rate control & Terminal Tx port Config:** Bandwidth rate control terminal UTP port
- **6. Terminal Tx port Table (Read only):** Displaying the terminal UTP port table information

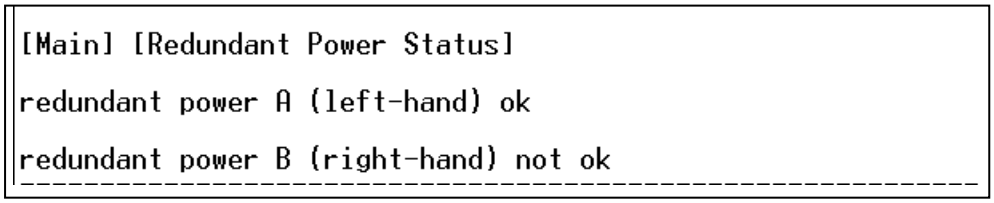
- **8. Auto Polling:** Set the value as 'True' to enable auto polling. When Auto Polling is set as 'True', the management board then is able to communicate with the particular module.
- **Q. Quit:** Exit from the current interface


Select one function (1-6, Q): 7
[Main] [Modules Settings] [TS-1000 Setting]
module: 2
1. Embedded SSRAM BIST : Fail
2. Power off Alarm(POA) : Disable
3. In-Band Loop Back Test : Fail
4. Auto Loop Back Test : Fail
5. Bandwidth rate control & Terminal Tx port config
6. Terminal Tx port Table(Read only)
Q. Quit
Select one function (1-6, Q):

Redundant Power Status

It shows current power supply status. The device has two slots for Power

module, on the left is power A, and on the right is power B. In main menu interface, enter "**3**" and press enter. Then, user will see as the following figure.

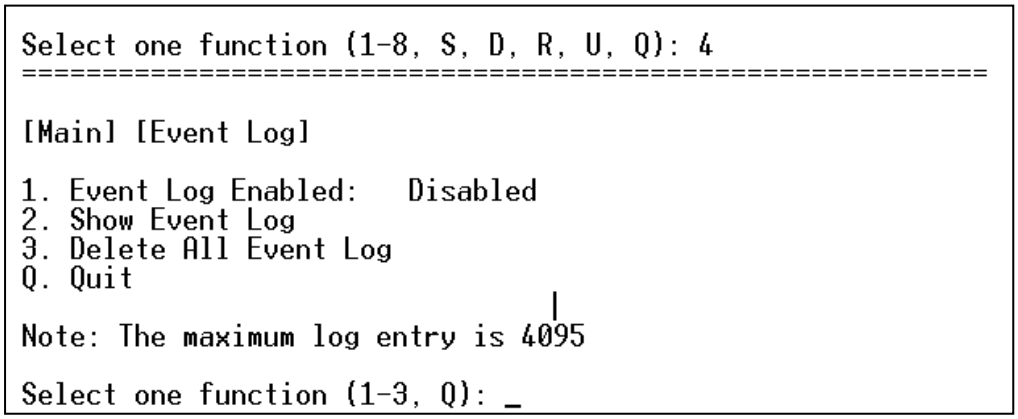


Redundant Power Status interface

Events Log

The system provides 4095 event records

- **1. Event Log Enabled:** The System will start record events when it is "**enable**"
- **2. Show Event Log:** For viewing event log records. To enable "**Event Log Enable**" function
- **3. Delete All Event Log:** Removing all event log entries which are stored in system Flash Rom
- **Q. Quit:** Exit from the current interface


Select one function (1-8, S, D, R, U, Q): 4
[Main] [Event Log]
1. Event Log Enabled: Disabled
2. Show Event Log
3. Delete All Event Log
Q. Quit
Note: The maximum log entry is 4095
Select one function (1-3, Q): _

Event Log interface

SNMP Trap

Configure SNMP Trap station. User can configure up to 4 IP address for trap.

- **1. Send Trap:** To enable or Disable Trap function

- **2. Trap community:** The Trap station must have same community string and can get trap information from this device(The maximum trap community string length is 32 characters. The default community string is "**public**")
- **3~4. Trap IP 1~4:** Assign the trap station's IP address. Only the authorized station can receive the Trap information
- **Q. Quit:** Exit from the current interface

```
[Main] [SNMP Trap]

1. Send Trap:           Disabled
2. Trap Community:      public
3. Trap IP 1:
4. Trap IP 2:
5. Trap IP 3:
6. Trap IP 4:
Q. Quit

Select one function (1-6, Q): _
```

SNMP Trap interface

Secure IP for Telnet, HTTP and SNMP

Configuring security management for Telnet, Web management and SNMP(four would be the maximum number of stations), If the function is enabled, then only the authorized station that with right IP address can manage this device.

```
[Main] [Secure IP]

1. Secure IP for Telnet:  Disabled
2. Secure IP for HTTP:    Disabled
3. Secure IP for SNMP:    Disabled
4. Secure IP 1:
5. Secure IP 2:
6. Secure IP 3:
7. Secure IP 4:
Q. Quit

Note: We suggest that you enable the HTTP option if the management CPU
uses an Internet real IP

Select one function (1-7, Q):
```

Secure IP interface

- **1. Secure IP for Telnet:** To Enable or disable the secure Telnet IP

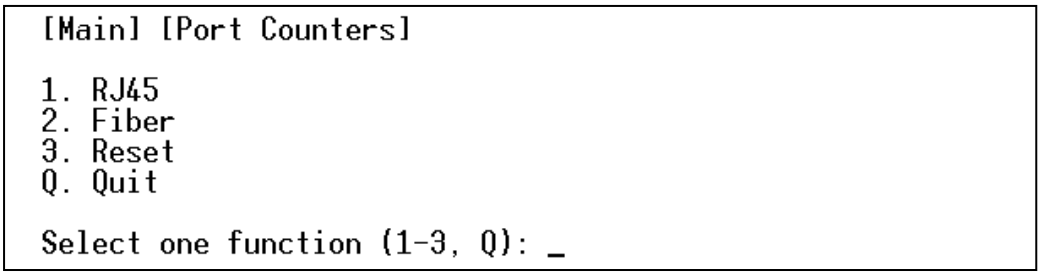
function

- **2. Secure IP for HTTP:** To Enable or disable the secure HTTP IP function
- **3. Secure IP for SNMP:** To Enable or disable the secure SNMP IP function
- **4~7. Secure IP 1~4:** Assigning the IP that can manage the device through Telnet, HTTP and SNMP
- **Q. Quit:** Exit from the current interface

Port Counters

Viewing UTP and fiber port counter information

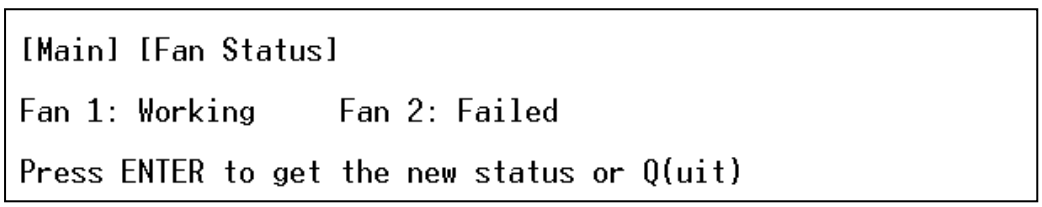
- **1. RJ-45:** Viewing all the UTP port counter information
- **2. Fiber:** Viewing all fiber port counter information
- **3. Reset:** Reseting all port counters
- **Q. Quit:** Exit from the current interface



Port Counters interface

Fan Status

For newest Fan status viewing, press “enter” key to bring it up



Fan Status interface

Save Current Settings

After modifying, the parameters still not save in the system. User need to do the save action, then all the parameters will be stored in system Flash Rom. The values will be effect after reboot. Enter "**R**" and press "**Enter**" key to save the current settings.

```
[Main] [Save Current Settings]

Are you sure? (Y, N): _
```

Save Current Settings interface

Factory Default Settings & Reboot System

To reset the system configuration back to original settings. After reboot, the system configuration will set to default value. Enter "**D**" and press "**Enter**" key. There are three optional selections that user can decide to set back to default value or keep current value.

- **Module settings:** User might keep current configure value when the system set to factory default settings. Enter "**n**" the current configure value will remain after the system set to factory default. Enter "**y**" the current configure value will be set to the factory default setting.
- **IP settings:** User might keep current IP address when the system set to factory default settings. Enter "**n**" the current IP address will remain after the system set to factory default. Enter "**y**" the current IP address will be set to the factory default setting.

```
[Main] [Factory Default Settings]

Are you sure? (Y, N): y
Do you want to default all modules settings? (Y, N): y
Do you want to use default IP settings? (Y, N): _
```

Factory default settings & Reboot system interface

Reboot System

To reboot the system without set the system configuration back to default. Enter “**R**” and press “**Enter**” key.

TFTP Configuration

Use TFTP function to update the firmware

- **1. Set TFTP Server IP:** set up the TFTP server IP address
- **2. Set File Name:** set up the firmware file name
- **3. Update Firmware:** execute the TFTP update firmware
- **Q. Quit:** exit from the current interface

```
[Main] [TFTP Configuration]

1. Set TFTP Server Ip         : 0.0.0.0
2. Set File Name              : rom.bin
3. Update Firmware.
Q. Quit

Select one function (1-3, Q): _
```

TFTP Configuration interface

Web-Based Management

About Web-based Management

The 16 Slots intelligent converter chassis support embedded HTML web manage. It offers advanced management features and allows users to manage the device from anywhere on the network through a standard browser such as Microsoft Internet Explorer.

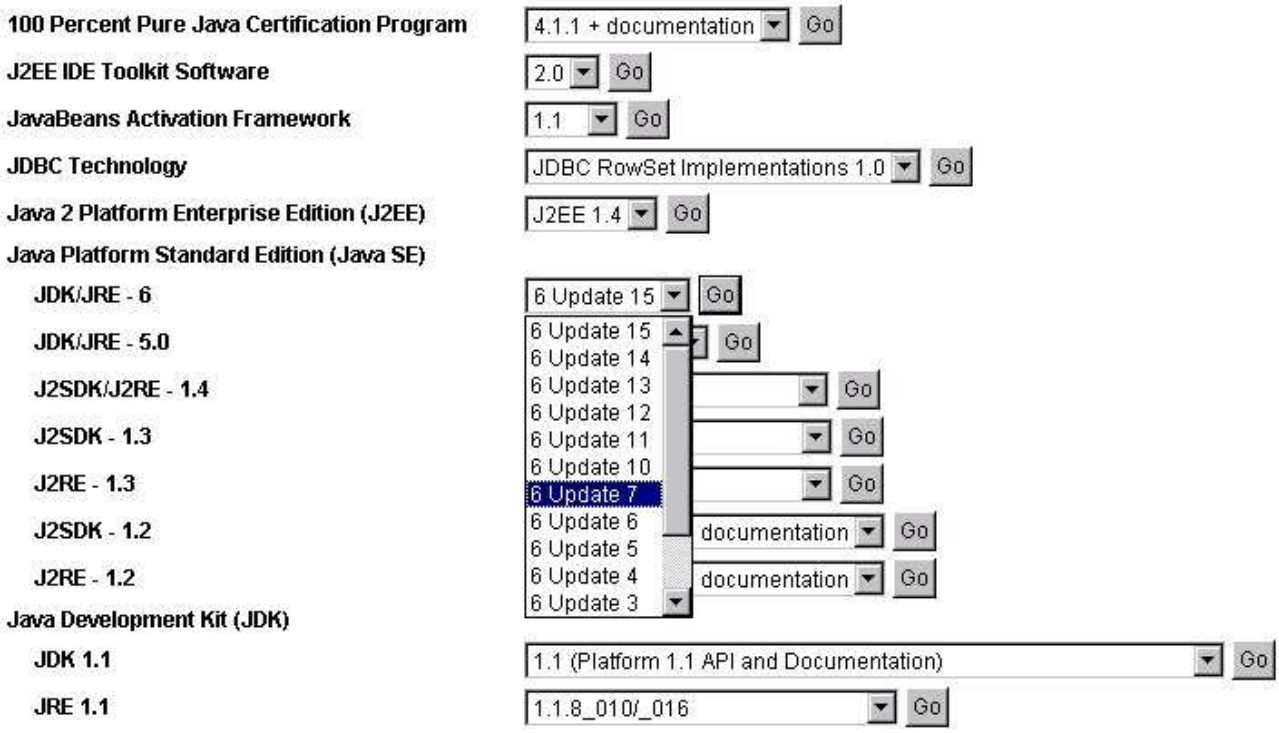
The Web-Based Management supports Internet Explorer 5.0. And, it is applied with Java Applets for reducing network bandwidth consumption, enhance access speed and present an easy viewing screen.

[NOTE] By default, IE5.0 or later version does not allow Java Applets to activate sockets. In fact, the user has to explicitly modify the browser setting to enable Java Applets to operate network ports.

The user has to download the Java Run Time Environment application to enable Java Applets. Please go to http://java.sun.com/products/archive/, select the **JDK/JRE Version 6 update 7**.

[NOTE] The Web-Based Management support only **JDK/JRE Version 6 update 7,** there is no commitment on the compatibility of other Java environment

---



JDK/JRE download page

System Login

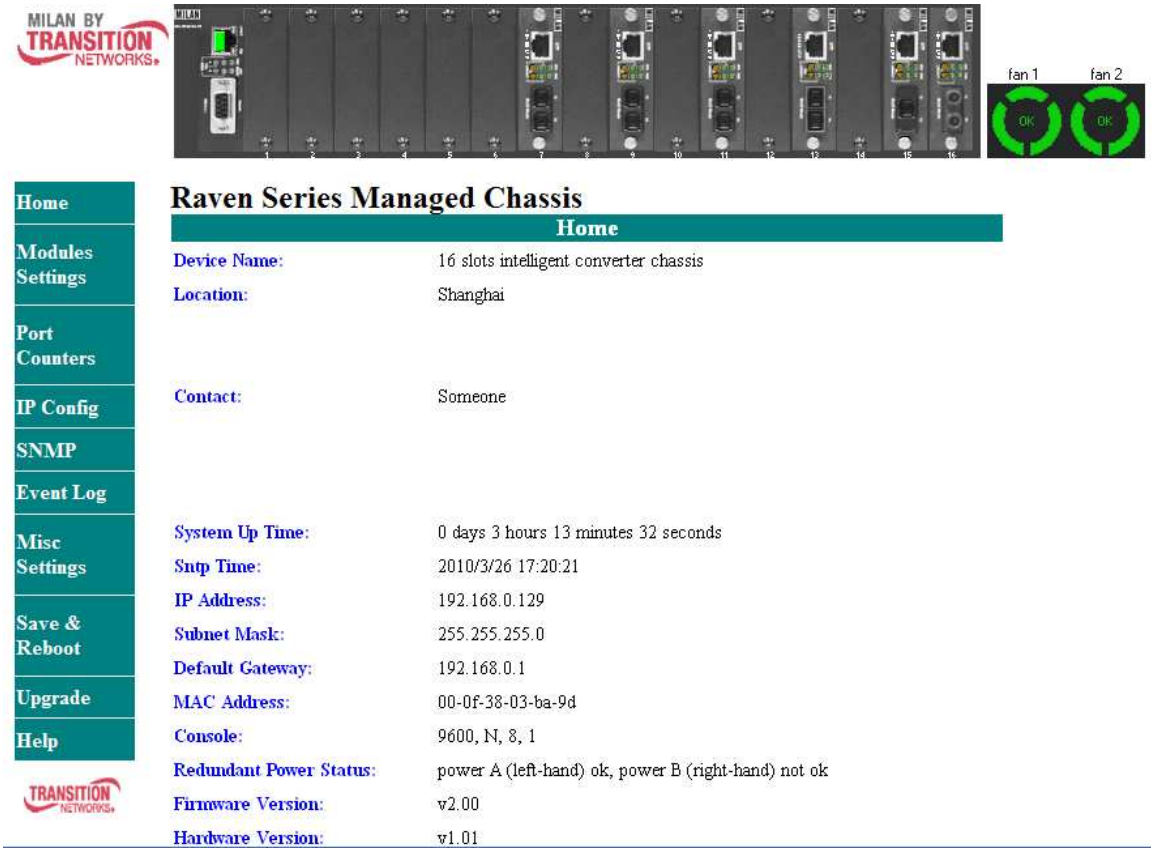
Follow the step below to login system

1. Start Internet Explorer
2. Key in" **http://**" + "**the IP address of the 16 Slots intelligent converter chassis**" (for example, the Factory default is 192.168.16.77) and press "**Enter**" key.

The authentication Window

3. The authentication screen appears

4. Key in the user name and password. The default is **“root”** for both
5. Press “**Enter**” or Click ”**OK**”, then the Home Screen of the Web-based management appear right after



Web management Home interface

The Home page displays the configuration of the 16 Slots intelligent converter chassis.

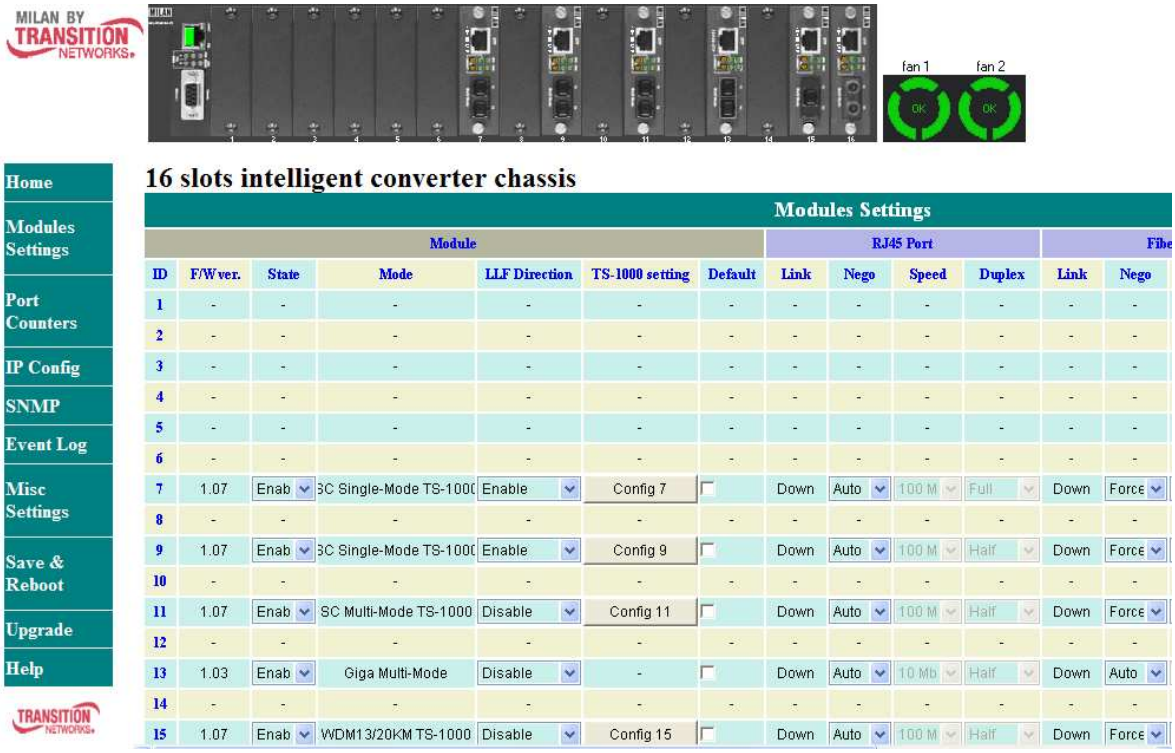
- **Device Name**: An administratively assigned name of the managed unit that can be modified in SNMP page
- **Location:** The physical location of this managed unit (e.g., laboratory, 3rd floor) that can be modified in SNMP page
- **Contact:** The contact person for this managed unit that can be modified in SNMP page
- **System Up Time:** The time last since the managed unit was re- initialized. It is read only
- **Sntp Time:** Display SNTP time status
- **IP Address:** The IP address of the managed unit that can be modified in IP Config page. Factory Default is **192.168.16.77**
- **Subnet Mask:** The subnet mask of the managed unit can be modified in

IP Config page. Default is **255.255.255.0**

- **Default Gateway:** The default gateway of the managed unit that can be modified in IP Config page. Factory Default is **192.168.16.254**.
- **MAC Address:** The MAC address of the managed unit. It is read only
- **Console:** display console parameter information
- **Redundant Power status:** Display the redundant power status
- **Firmware Version:** The firmware version of the management unit. It is read only. User can online upgrade the new firmware if the new version is released
- **Hardware Version:** The hardware version of the converter. It is read only

Modules settings

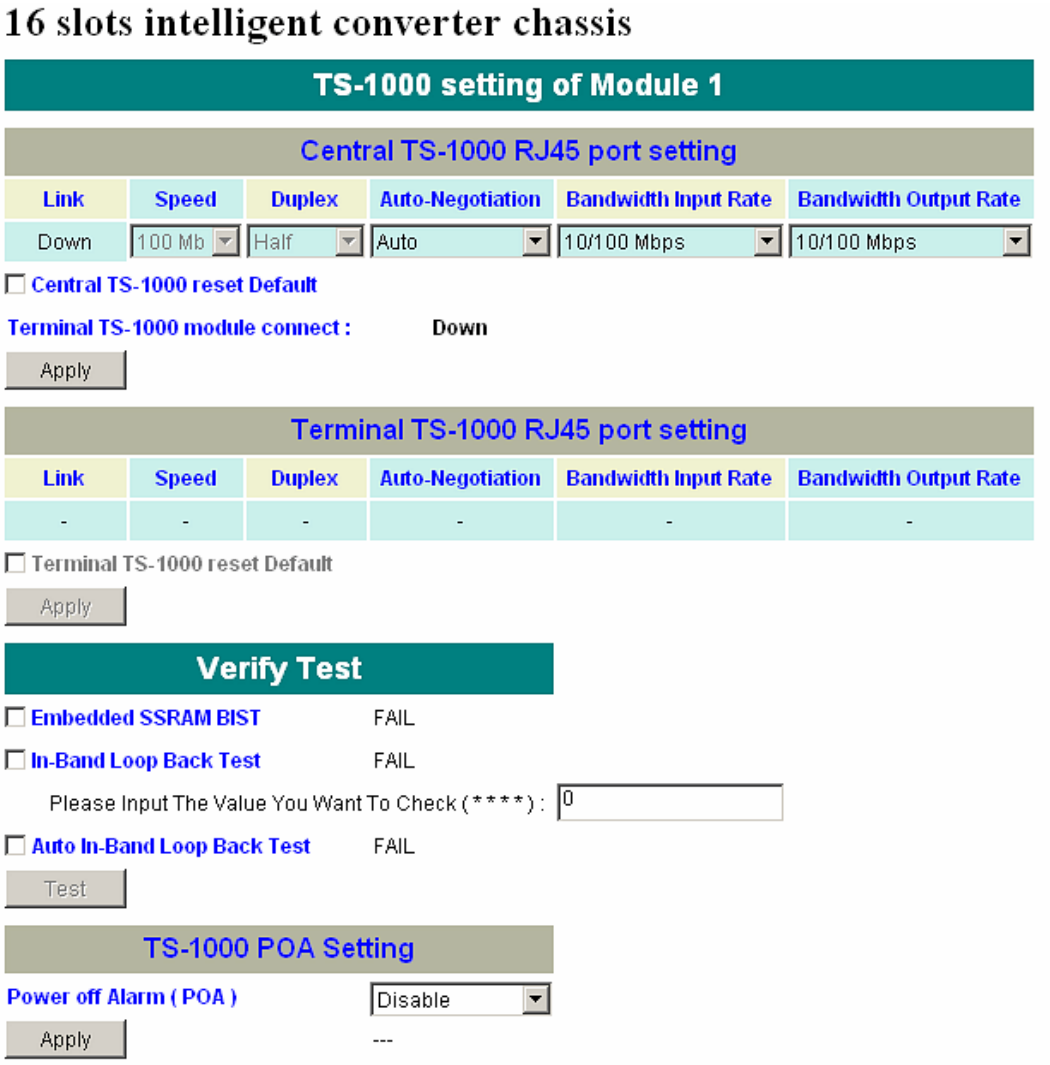
Modules settings show the modules that installed on the 16 Slots intelligent converter chassis. In modules settings, it has 4 parts for configure—**module**, **RJ-45 Port**, **Fiber Port**, and **Note**.


MILAN BY TRANSITION NETWORKS
fan 1
fan 2
OK
OK
Home
Modules Settings
Port Counters
IP Config
SNMP
Event Log
Misc Settings
Save & Reboot
Upgrade
Help
16 slots intelligent converter chassis
Modules Settings
Module
RJ45 Port
ID F/W ver. State Mode LLF Direction TS-1000 setting Default Link Nego Speed Duplex Link Nego
7 1.07 Enab SC Single-Mode TS-100(Enable Config 7 Down Auto 100 M Full Down Force
9 1.07 Enab SC Single-Mode TS-100(Enable Config 9 Down Auto 100 M Half Down Force
11 1.07 Enab SC Multi-Mode TS-1000 Disable Config 11 Down Auto 100 M Half Down Force
13 1.03 Enab Giga Multi-Mode Disable - Down Auto 10 Mb Half Down Auto
15 1.07 Enab WDM13/20KM TS-1000 Disable Config 15 Down Auto 100 M Half Down Force

Modules Settings interface

Module

- **State:** It displays the module current status. User can enable or disable the module state. When the state is disabling, this module cannot be configured
- **Mode:** It shows the module mode. The mode was auto detected by system when installed on the device. When the mode is TS-1000, it means this module supports TS-1000 standard and then click TS-1000 configuration button to configure the TS-1000 function
- **LLF enable/disable:** When the RJ-45 or Fiber is link down, it will force the other port disconnect automatically. The forced way is depends on the RJ-45 control Fiber or Fiber control RJ-45 port. The LLF default is "**RJ-45 Control FX**" and other selections are "**Fx Control RJ-45**" and "**Disable**". On the module that support TS-1000 only can enable or disable the LLF function but can not configure the LLF direction
- **Default:** set the module back to default value
- **TS-1000 setting:** click to enter the TS-1000 setting interface



TS-1000 setting interface

- **Central TS-1000 RJ-45 port setting:** The RJ-45 port of the central site setting.
  - ✓ **Link:** The port link status
  - ✓ **Speed:** Configure the port speed in force negotiation mode – 100Mbps or 10 Mbps
  - ✓ **Duplex:** When the port negotiation is in force mode, user can configure duplex mode – half or full
  - ✓ **Auto-Negotiation:** Configure the negotiation mode – auto or force
  - ✓ **Bandwidth Input Rate:** Configure the input bandwidth rate – 10/100Mbps, 2.5/ 25Mbps, 5/50Mbps, or 7.5/75Mbps
  - ✓ **Bandwidth output Rate:** Configure the output bandwidth rate – 10/100Mbps, 2.5/ 25Mbps, 5/50Mbps, or 7.5/75Mbps.

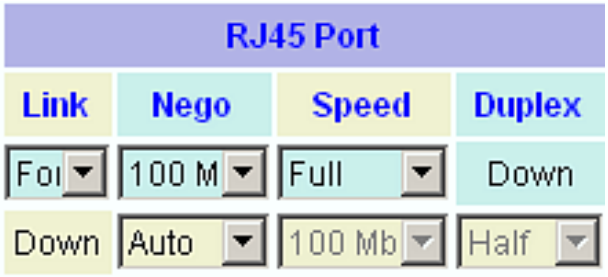
- **Central TS-1000 reset default:** Set the configuration back to the default settings
- And then, click Apply to apply the configuration
- **Terminal TS-1000 RJ-45 port setting:** The RJ-45 port of the terminal site setting. When the connection is established between the central site, user are able to configure the terminal site
  - ✓ **Link:** the port link status
  - ✓ **Speed:** Configure the port speed in force negotiation mode – 100Mbps or 10 Mbps
  - ✓ **Duplex:** When the port negotiation is in force mode, you can configure duplex mode – half or full
  - ✓ **Auto-Negotiation:** Configure the negotiation mode – auto or force
  - ✓ **Bandwidth Input Rate:** Configure the input bandwidth rate – 10/100Mbps, 2.5/ 25Mbps, 5/50Mbps, or 7.5/75Mbps
  - ✓ **Bandwidth output Rate:** Configure the output bandwidth rate – 10/100Mbps, 2.5/ 25Mbps, 5/50Mbps, or 7.5/75Mbps
- **Terminal TS-1000 reset default:** Set the configuration back to the default settings
- And then, click Apply to apply the configuration
- **Verify Test:** Set up some TS-1000 loop back test
  - ✓ **Embedded SSRAM BIST:** To test central site converter module status. When test back value is OK, it means the central site converter module is normal. When test back value is fail or didn't test, it means the central site converter module is fail
  - ✓ **In-Band Loop Back Test:** Checking the fiber port connection status between remote and central site converter. User needs to set a transfer value and verify the return value same as user has set
  - ✓ **Auto Loop Back Test:** Checking the fiber port connection status between remote and central site converter automatically
- When all items are set, click Test to start the testing
- **TS-1000 POA setting:** Set up the power off alarm function

- ✓ **Power off Alarm (POA):** To enable or disable the power off alarm function. **Enable --** before the remote converter power off, the remote converter will send out the alarm notice to the central manager converter

➢ And then, click Apply to apply the configuration

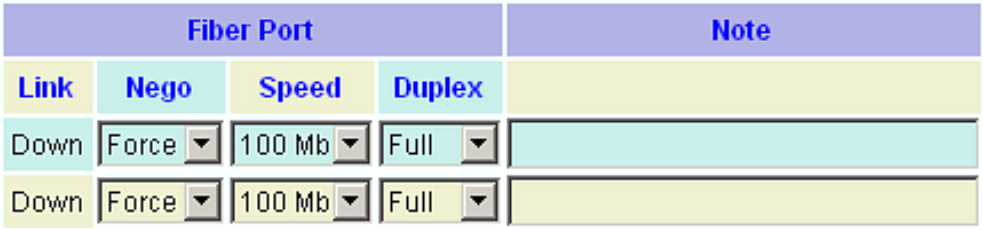
RJ-45 Port

- **Link:** Showing the RJ-45 port current link status
- **Nego:** Select the negotiation mode
  - ➢ **Auto** means the system automatically select the speed(Default)
  - ➢ **Force** means the user can select the speed
- **Speed:** Select the speed of port (Make sure the "**Nego**" column is set as "**Force**"; Otherwise, the speed function will be disable)
- **Duplex:** Select the Duplex mode. (Make sure the "**Nego**" column is "**Force**"; Otherwise, the duplex function is disabling)



Fiber Port

- **Link:** It shows the RJ-45 port current link status
- **Nego:** Select the negotiation mode
- **Speed:** Select the speed of port
- **Duplex:** Select the Duplex mode
- **Note:** A note can be filled in for this module within maximum characters is 32
- After modifying, click Apply to have the configuration taken effect.



Port Counter

Display all port counter information in here

- Click Refresh to get current information
- **Rx Good Pkts(R):** Amount of good packets has received/R means RJ-45 port
- **Rx Bad Pkts(R):** Amount of good packets has received/R means RJ-45 port
- **Tx Good Pkts(R):** Amount of good packets has transmitted/R means RJ-45 port
- **Tx Bad Pkts(R):** Amount of bad packet has transmitted/R means RJ-45 port
- **Tx Collision (R):** Amount of transmit collision/R means RJ-45 port
- **Rx Collision (R):** Amount of receive collision/R means RJ-45 port
- **Rx Good Pkts(F):** Amount of good packets has received/F means Fiber port
- **Rx Bad Pkts(F):** Amount of good packets has received/F means Fiber port
- **Tx Good Pkts(F):** Amount of good packets has transmitted/F means Fiber port
- **Tx Bad Pkts(F):** Amount of bad packet has transmitted/F means Fiber port
- **Tx Collision (F):** Amount of transmit collision/F means Fiber port
- **Rx Collision (F):** Amount of receive collision/F means Fiber port

16 slots intelligent converter chassis

Port Counters

Module	Rx Good Pkts(R)	Rx Bad Pkts(R)	Tx Good Pkts(R)	Tx Bad Pkts(R)	Tx Collision(R)	Rx Good Pkts(F)	Rx Bad Pkts(F)	Tx Good Pkts(F)	Tx Bad Pkts(F)	Tx Collision(F)
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-

Reset

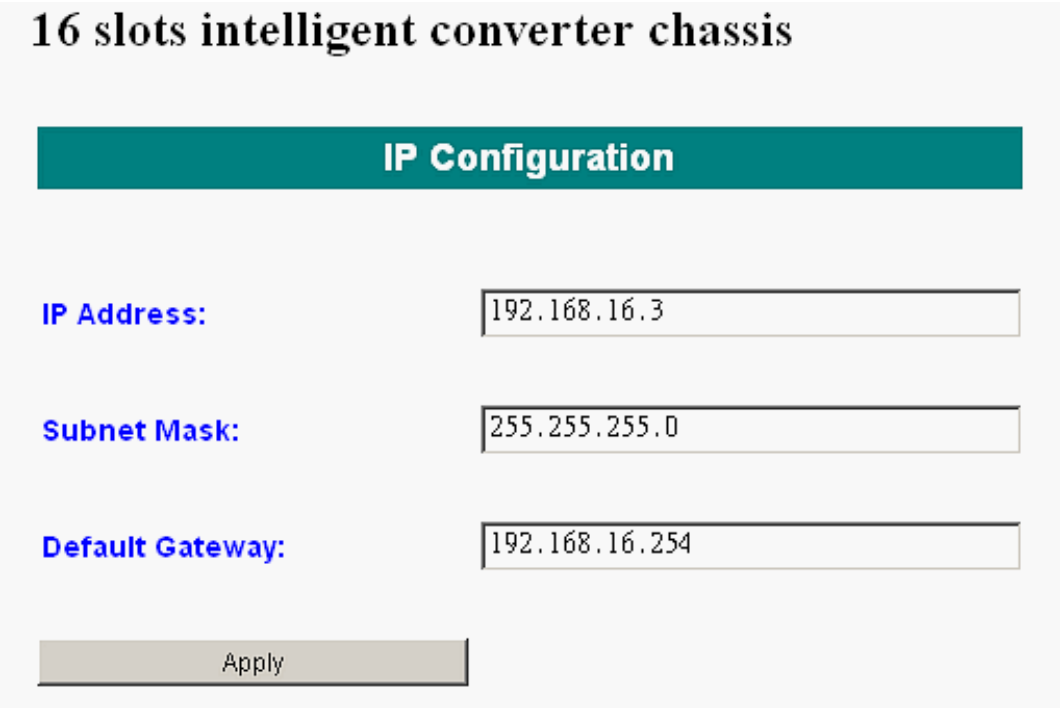
Note 1: (R) = RJ45 Port

Note 2: (F) = Fiber Port

Port Counter interface

IP Config

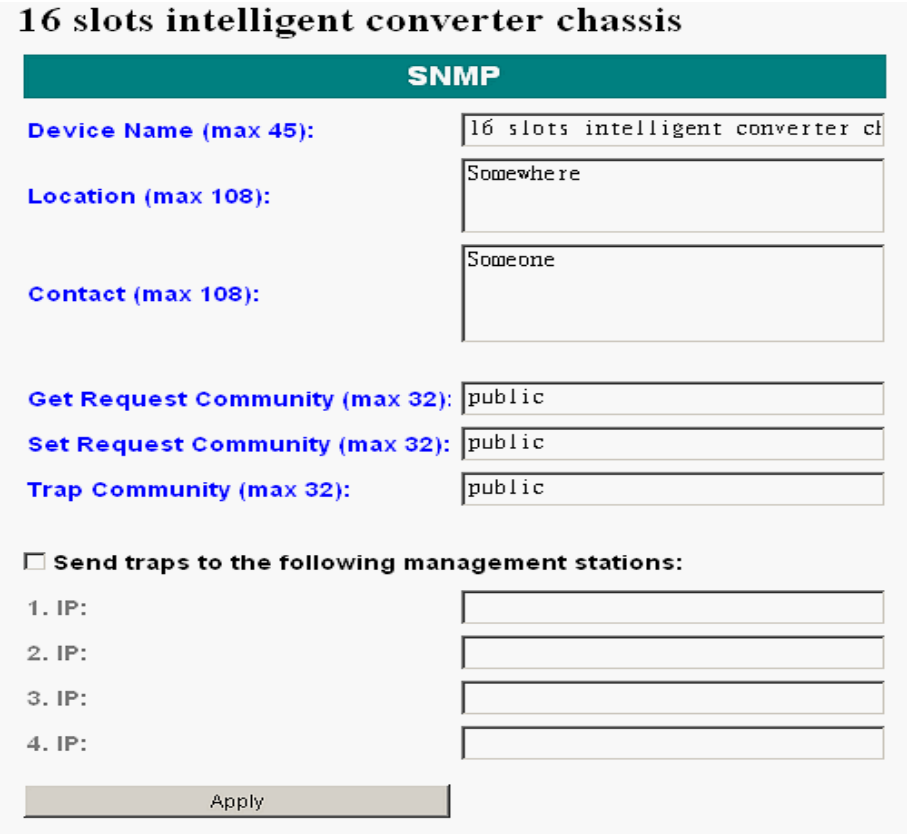
Changing of the IP address, subnet mask, and default gateway. Just simply fill in the new IP address, subnet or default gateway in corresponding column. Then, click Apply to have the configuration taken effect. Users should reboot system to restore the new settings.



IP Config interface

SNMP

Configuring device name, location, contact, the "get request", "set request" and Trap community string. The default value of get request, set request and Trap community is “**public**”. These three parameters must be correctly to performed "get request" from the management unit, "set request" to the management unit and send trap to the management unit, then click Apply to have the settings taken effect. There are up to 4-trap management stations could set to receive the trap packets from the 16-slot chassis converter. Check marks the “**send traps to the following management stations**” and fill in the IP address of trap management station. Remember to set the **Trap community** while send and receive trap packet between the converters and trap management stations. The trap community must be same between the converters and trap management station. At last, click Apply to have the configuration taken effect.

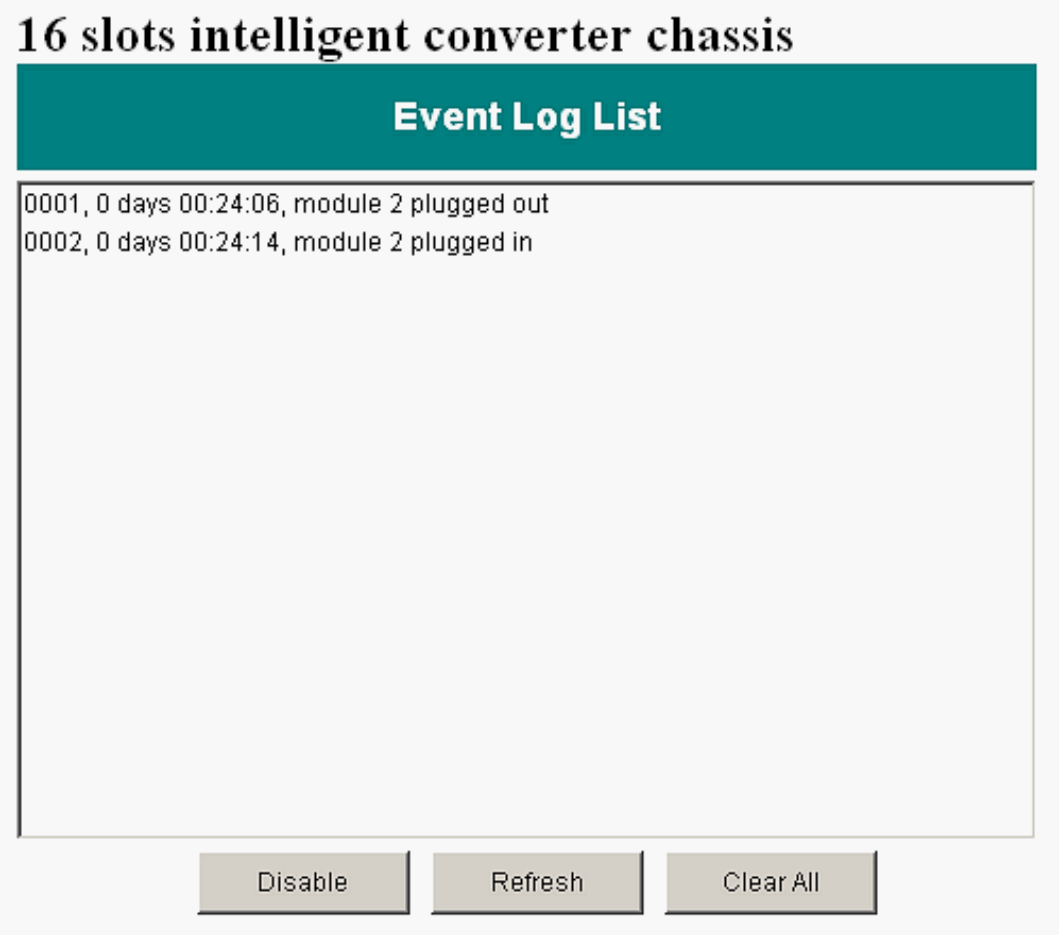


SNMP interface

Event Log

To enable the event log function and view the event logs

- Click Enable to enable the event log function
- Or, press Refresh to get the event logs. The system will not auto refresh the event log
- To stop the event log function, click Disable
- To clear all event logs in the display frame, press Clear All

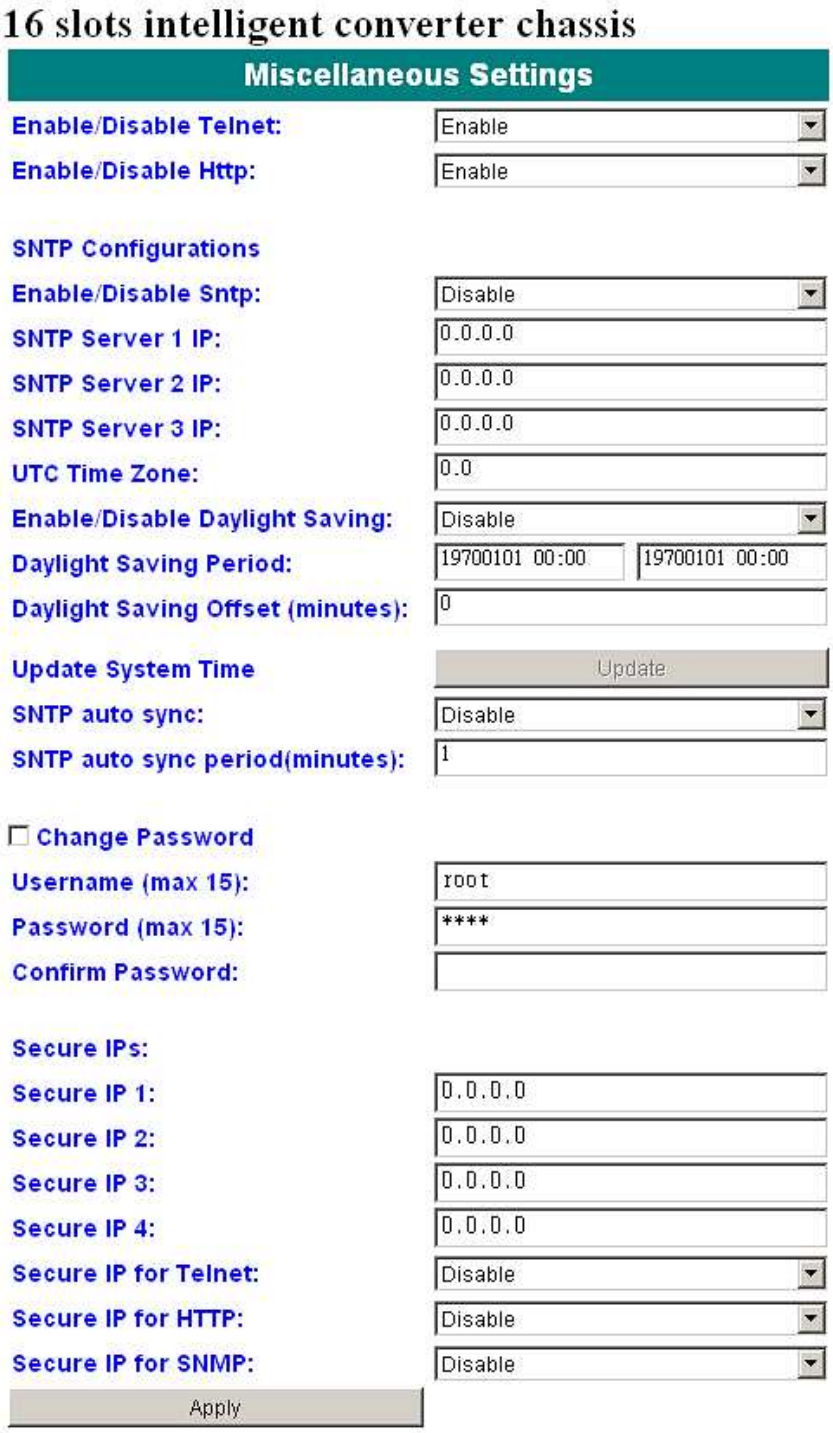

16 slots intelligent converter chassis
Event Log List
0001, 0 days 00:24:06, module 2 plugged out
0002, 0 days 00:24:14, module 2 plugged in
Disable
Refresh
Clear All

Event Log interface

Miscellaneous Settings

- **Enable/Disable Telnet:** User can enable or disable the remote telnet function. The default value is “enable”
- And then, click Apply to have the configuration taken effect
- **Enable/Disable HTTP:** To enable or disable the remote HTTP function. The default value is “enable”
- And then, Click Apply to have the configuration taken effect.
- **SNTP Configuration:** Configure the SNTP (Simple Network Time Protocol) settings. The SNTP allows user to synchronize switch clocks in the Internet.
  - **Enable/Disable Sntp Client:** To enable or disable SNTP function to get the time from the SNTP server
  - **Sntp Server 1 IP:** Set the SNTP server IP address
  - **Sntp Server 2 IP:** Set the SNTP server IP address
  - **Sntp Server 3 IP:** Set the SNTP server IP address
  - **UTC Timezone:** Set the switch location time zone
  - **Enable/Disable Daylight Saving:** To enable or disable daylight saving function
  - **Daylight Saving Period:** When daylight saving is enabling, you can set up the daylight saving period
  - **Daylight Saving Offset (minutes):** Set up the daylight saving time offset value
  - **Update System Time:** click Apply to update the system time
  - **SNTP auto sync:** To enable or disable automatically synchronize time with the SNTP server
  - **SNTP auto sync period (minutes):** Set up the time that automatically synchronizes time with SNTP server
- **Change Password:** Re-set the login username and password. Mark the check box to enable password change setting
  - **Username (max 15):** Key in the new username(The maximum of length is 15 characters)

- **Password (max 15):** Key in the new password(The maximum of length is 15 characters)
- **Confirm Password:** Re-enter the new password for confirmation



Misc Settings Interface

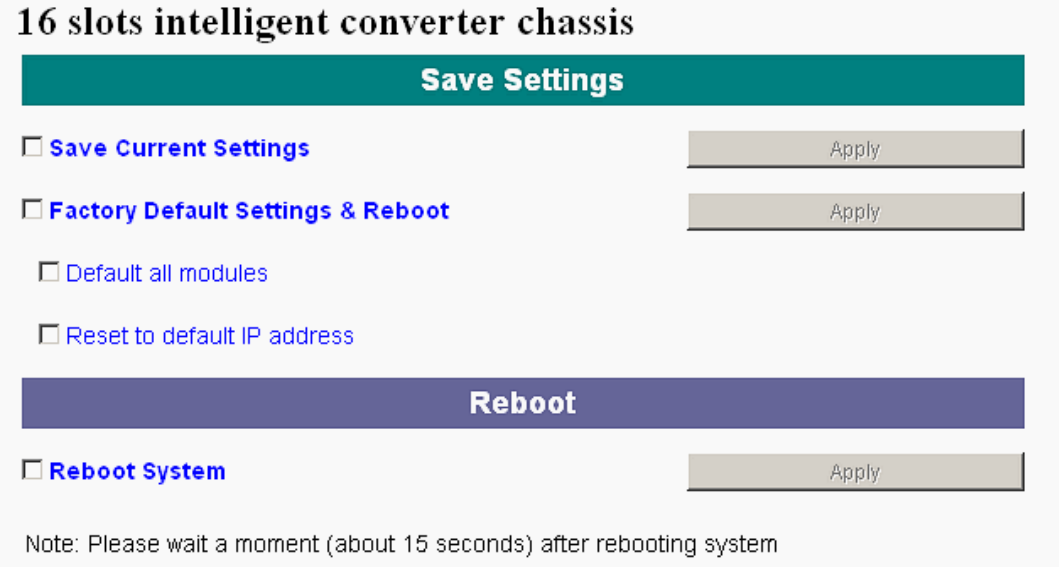
- **Security IP:** Configure security management for Telnet, Web management and SNMP, and the maximum number of stations are 4, if the function is

enabled then only the authorized station that with right IP address can manage this device.

- **Secure IP 1~4:** Assign the IP that can manage the device through Telnet, HTTP and SNMP
- **Secure IP for Telnet:** To enable or disable the secure Telnet IP function
- **Secure IP for HTTP:** To enable or disable the secure HTTP IP function
- **Secure IP for SNMP:** To enable or disable the secure SNMP IP function

Save and Reboot

- **Save Current Settings:** To save current settings by click the "Save Current Settings" and click the Apply, then current settings will be executed automatically
- **Factory Default Settings & Reboot:** To use the factory default settings, check the "Factory Default Settings& reboot" checkbox then click the Apply. There are two optional selections for user to choose from, which are restoring modules back to default value or just IP address back to default value
  - **Default all Modules:** User might keep current configure value when the system is set as factory default settings
  - **Reset to default IP address:** User might keep current IP address when the system is set as factory default settings
- **Reboot system:** To reboot system, check the "**Reboot System**" checkbox then click the Apply. Please wait a moment (about 15 seconds) then continue to operate the device



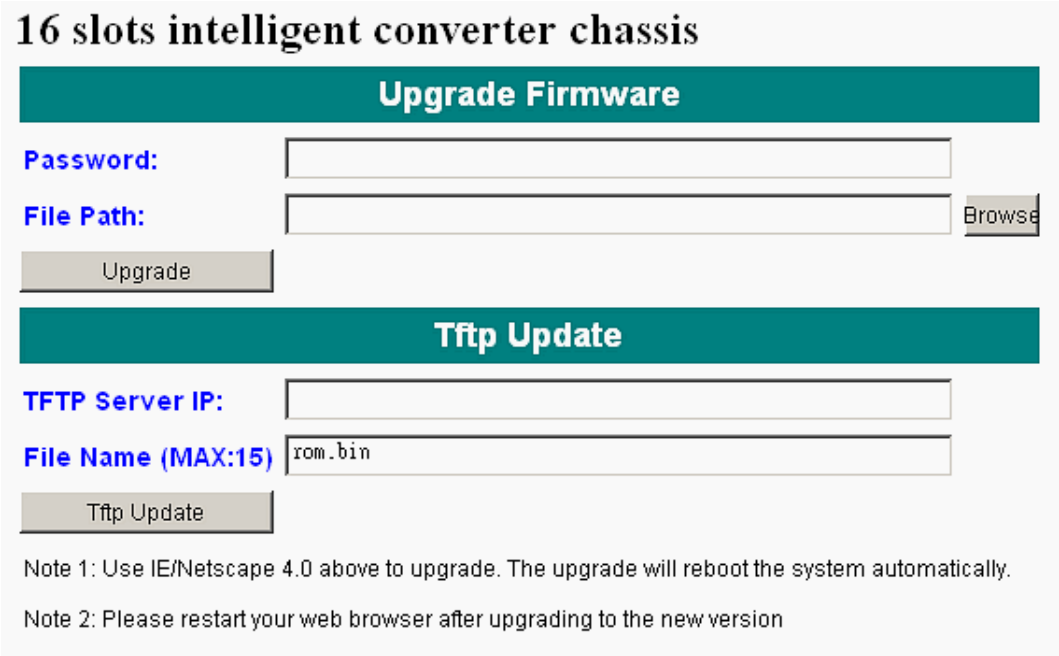
Save and Reboot interface

Upgrade

User can on-line upgrade the firmware of the device or use TFTP to update the firmware

- **Upgrade Firmware**(using HTTP to update the firmware)
  1. Using http to download the new version of firmware from vendor web site
  2. Enter password in the "**Password**" box (Please note that the default password is **root**, and it follows the user password change it could be changed by individual user.)
  3. Enter the update firmware file in the "**File Path**" box. (Click Browse to find the file)
  4. Click the Upgrade

[NOTE] If users can't upgrade the new firmware successfully, please try again (Do not shut down the device!)



Upgrade interface

- **Tftp Update(**using tftp to update the firmware)
  1. **TFTP Server IP:** set up the TFTP server IP address
  2. **File Name:** set up the firmware file name
  3. Click the Tftp Upgrade button to start updating.

Help

In each configuration section, user can click “Help” and the help window will pop up.

SNMP Management

This section describes how to configure and manage the device by accessing Management Information Base (MIB) objects with the SNMP protocol.

SNMP Management

The device's MIB options are accessible through SNMP. Also, instead of defining a large set of commands, SNMP performs all operations using the "GET", "GETNEXT" and "SET" commands. And, the SNMP agent that resides on the device can respond to MIB-related queries being sent by the network management software.

The SNMP agent gathers data from the MIB, which keeps information about device parameters and network data. And then, the agent can send traps or notification of certain events to the manager.

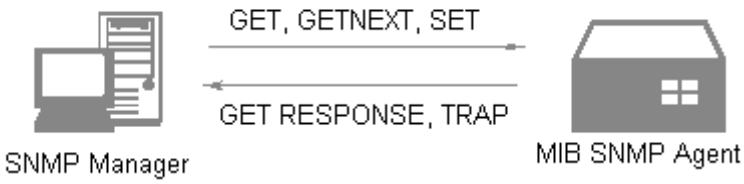


Figure 6-1 SNMP Network

The SNMP manager uses information in the MIB to perform the operations described below:

Operation	Description
GET	Retrieve values of SNMP objects from a network device

GETNEXT	Specify an SNMP object in a network device and then retrieve information about the rest of SNMP objects in the device
SET	Modify and store values of SNMP objects in a network device
GET RESPONSE	Replying the GET, GETNEXT, and SET commands are sent by SNMP agent
TRAP	A message sent by an SNMP agent to an SNMP manager indicating some event occurred

The commands of SNMP management

Specification

This section provides the specifications of the converter modules

Standards	IEEE802.3 10BASE-T IEEE802.3u 100BASE-TX and 100BASE-FX with N-way auto negotiation IEEE802.3ab Gigabit copper with N-way auto-negotiation IEEE802.3z for Gigabit fiber
Connector	■ **100FX Module:** **Fiber:** Duplex ST/SC, Simplex SC (WDM single mode) **RJ-45:** CAT-5 (10/100Mbps) Twisted Pair cable ■ **Gigabit Module:** **Fiber:** Duplex SC (Single mode 10KM, Multi mode 500Meters) **RJ-45 :** CAT- 5 (1000Mbps) 4 pairs of UTP/STP cable ■ **CPU Board:** RJ-45 for 10/100Mbps, Full/Half Duplex. Cable support CAT-3/5 (10/100Mbps) ■ **WDM module:** Fiber: Simplex SC (single mode 20KM) RJ-45: CAT. 5 2 pairs of UTP cable ■ **Mini GBIC module:** (for 3.3v only) Fiber: SFP module (empty) RJ-45: CAT- 5 (1000Mbps) 4 pairs of UTP/STP cable
Switch architecture	Store and Forward

	Internal Packet Gap 960ns Filter illegal Error packet
LED Indicators	■ **CPU Module** CPU Ready, Power Good (A, B) Power Fail (A, B), TX (link/Act, FDX) ■ **100FX Module** Power, TX (Link /Act, speed, FDX), FX (Link /Act, FDX) ■ **Gigabit Module** Power, Gigabit Copper (Speed, 1000Mbps, LK/ACT, FDX/COL), Fiber (Link/Act, FDX/COL) ■ **100/1000TX to MINI GBIC module** Power, Gigabit Copper (Speed, 1000Mbps, LK/ACT, FDX/COL), Fiber (Link/Act, FDX/COL)
Fiber parameters	■ **Fiber Core:** Multi-Mode (62.5/125um, 50/125um) Single-Mode (9/125μm) ■ **Wavelength:** 100Mbps multi-mode: 1310nm / 100Mbps single-mode: 1310nm 100M WDM 1310: TX 1310nm, RX 1550 nm 100M WDM 1550: TX 1550nm, RX 1310 nm ■ **Available Fiber distance:** 100Mbps module: Single-Mode Fiber (30 KM) / Multi-Mode (2KM) 100M WDM module (W13, W15): 20KM Gigabit modules: SX (Multi-mode) 500 Meters LX (Single mode) 10 KM ■ **Optical Transceiver parameter:**

	100Mbps Multi-Mode: TX (–19dBm), RX (-31dBm), Power budget (12dBm) 100Mbps Single-mode (30KM): TX (–15 dBm), RX (-34 dBm), Power budget (19dBm) Gigabit SX Transceiver: TX (–9.5dBm), RX (12.5 dBm), Power budget (3dBm) Gigabit LX Transceiver: TX (–9.5dBm), RX (-20 dBm), Power budget (10.5dBm)
Transparent packet	64 to 1518 Bytes for Non-VLAN Ethernet packet 68 to 1522 Bytes for VLAN-Tag type Ethernet packet
Dimensions	448mmx 279mm x 89mm (W x D x H)
Operational Temperature	0ºC to 45ºC (32ºF to 113ºF)
Transparent packet	64 to 1518 Bytes for Non-VLAN Ethernet packet 68 to 1522 Bytes for VLAN-Tag type Ethernet packet
Power Supply	Redundant and Load Sharing function support (AC: 90~240 V_{AC}, 50/60 HZ
EMI & Safety	FCC Class A / CE / UL

10900 Red Circle Drive
Minnetonka, MN 55344
Tel.: +1.952.941.7600
techsupport@transition.com